

What is claimed is:

1. A method for releasing a microstructure for fabricating a device of a micro electro mechanical system (MEMS), comprising the steps of:

supplying alcohol vapor bubbled with anhydrous HF;

maintaining a temperature of the supplying device and a moving path of the anhydrous HF and the alcohol to be higher than a boiling point of the alcohol;

performing a vapor etching by controlling a temperature and a pressure to be within the vapor region of a phase equilibrium diagram of water; and

removing silicon oxide of a sacrificial layer on a lower portion of the microstructure.

2. The method of claim 1, wherein the vapor etching is performed under a pressure ranged to be 25-75torr.

3. The method of claim 1, wherein the vapor etching is performed under a temperature ranged to be 25-80°C.

4. The method of claim 1, wherein a step of performing a wet etching of a part of the silicon oxide precedes the step of performing the vapor etching.

5. The method of claim 1, wherein the silicon oxide of a sacrificial layer is any one component selected from the

group consisting of TEOS, LTO, PSG, BPSG and a thermal silicon oxide.

6. The method of claim 1, wherein the alcohol is any
5 one component selected from the group consisting of methanol, isopropyl alcohol and ethanol.

7. The method of claim 1, wherein the MEMS device has
a laminated layer structure or a monocrystal silicon
10 structure.

8. A method for removing silicon oxide of a
sacrificial layer for a microstructure in a MEMS device,
characterized by removing the silicon oxide of a sacrificial
15 layer with a vapor etching using anhydrous HF and alcohol by controlling a temperature and a pressure inside of an etching chamber to be within the region of a vapor of a phase equilibrium diagram of water.

20 9. The method of claim 8, wherein the pressure inside of the etching chamber is ranged to be 25-75torr.

10. The method of claim 8, wherein the temperature
inside of the etching chamber is ranged to be 25-80°C.

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